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ABSTRACT

This study was designed to identify some of the individual physical features of the mother that promote adaptive responding of 2-year-old children in a novel environment. Previous studies have suggested that any ambiguous stimulus configuration might be effective if the child can be led to perceive it as his mother. After being separated from their mothers, 48 children (20 to 30 months old) were given either an unrecognizable or a sharply focused photograph of their mother to carry with them in an unfamiliar playroom. A female escort either correctly identified the photograph for the child ("this is a picture of your mother") or mislabeled it as a picture of a stranger ("this is a picture of Mrs. Jane Smith"), or gave it no verbal label. Children were observed for 5 minutes and the durations of the time they spent playing with toys, gazing at the photograph, or holding the photograph were recorded. All instances of spontaneous verbal labeling of the photograph were also recorded. Results indicated that those children who were presented with a clear photograph of their mother not only held, looked at, and spontaneously identified the picture more than did children with an unrecognizable image, but that they also played, explored, and remained in the playroom longer. These results suggest that adjustment during necessary separations such as day care and hospitalization may be enhanced by providing young children with a photograph of their mother. (Author/MP)

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Effects of Mother Photographs on Separation Distress

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Abstract

This study was designed to identify some of the individual features of the mother that promote adaptive responding of two-year-old children in a novel environment. Previous work has suggested that any ambiguous stimulus configuration might be effective if the child can be led to perceive it as the mother. After being separated from their mother, 48 children (20-30 months old) were given an unrecognizable or a sharply focused photograph of her to carry with them in an unfamiliar playroom. A female escort either correctly identified the photograph for the child, mislabeled it as a picture of a stranger, or gave it no verbal label. Children with a clear photograph played, explored, and remained in the playroom longer than those presented with a blurred image. They also held, looked at, and spontaneously named the picture more. The verbal labels exerted no effects on separation behaviors or on responses directed toward the photographs. The results indicate that visual perception alone can suffice to provide children as young as 20 months with some of the functional properties of their mother.

Effects of Mother Photographs on

Separation Distress

When separated from their mother in a novel setting, young children frequently display marked deteriorations in performance. Distressful behaviors such as crying, visual searching, and leaving a playroom to pursue the mother appear to interfere with play and exploration (Adams + Passman, in press; Rinkoff + Corter, 1980; Weinraub + Lewis, 1977). Although many parameters of maternal attachment have been investigated, documentation of the means by which children perceive the mother is limited. In early research, the importance of tactile stimulation and close physical contact was observed in the formation of attachments for infant monkeys (Harlow, 1958) as well as for some children (Schaffer + Emerson, 1964). Touch has also been noted in explanations of attachments to stimuli other than the mother, e.g., security blankets. However, while the blanket can promote adaptive behaviors as effectively as the mother, it was found that few children actually touched either one (Passman, 1977; Passman + Weisberg, 1975). Seeing, hearing, or perhaps just thinking about the attachment agent seemed to be sufficient to facilitate performance.

To examine the role of vision more directly, preschool-aged children were individually shown life-sized, silent, color motion pictures of their mother in her absence (Passman + Erck, 1978). Children with their mother, whether she was physically present or on film, played more readily than others presented with a filmed stranger or a control light. Monochromatic

videotapes and vocal recordings of the mother were also found to function as well as her actual presence and better than corresponding presentations of a female stranger (Adams + Passman, 1979). Thus, it would appear from these studies that either visual or auditory reception alone is sufficient to promote adaptive responding. Yet, when the children's perceptual interpretations of the films were considered by Passman and Erck (1978), these conclusions became less clear-cut. Post-experimental interviews with the children revealed that nearly half of those shown the filmed stranger erroneously identified her as their own mother, perhaps because of the poor clarity of the films. A re-analysis of these data demonstrated that the children who spontaneously misidentified the stranger played and explored significantly more than those who did not. These results imply that any representation that is perceived as being the mother, whether accurately or not, may be capable of reducing distressful behavior in her absence. Even a remote likeness, then, might function similarly to the actual mother if the child can be led to apprehend it as the mother.

It is of both theoretical and practical interest to determine how minimal a token of the mother is necessary to maintain some of her functional properties and at how early an age this process can occur. Symbolic and representational behaviors appear to emerge at 18 to 24 months (Lewis + Brooks, 1978), an age at which separation distress is also high (Weinraub + Lewis, 1977). For these reasons, children younger than those examined earlier (Adams + Passman, 1979; Passman + Erck, 1978) were observed with a further reduced visual representation of the mother (i.e., a photograph). It is known that mere line drawings of objects can be recognized

and labeled by a 19-month-old child with no prior practice (Hochberg + Brooks, 1962) and that nearly 90% of children between 18 and 24 months old can name slides of their mothers or fathers appropriately (Brooks-Gunn + Lewis, 1979). However, these studies and other research on young children's abilities to recognize pictures of people (e.g., Dirks + Gibson, 1977) have focused primarily on the development of perceptual abilities rather than on the symbolic or distress-reducing properties that the representations may have. One notable exception is Robertson and Robertson's (1971) anecdotal case report of a 28-month-old boy who cuddled and kissed a photograph of his mother while they were separated.

The purpose of this study was to examine the functional properties of minimal representations of the mother. Because the interpretation of a stimulus may be as important as its actual resemblance to the mother (cf., Passman + Erck, 1978), attempts were made to influence the child's beliefs about photographs. Some children were given an ambiguous picture and told that it was of their mother; others received a clearly focused image of her but were told it was not their mother. Since what is said to a child before the mother leaves can affect the child's behavior during the separation (Adams + Passman, in press; Weinraub + Lewis, 1977), the use of verbal labels seemed a reasonable method for examining the influence of the child's perceptions on behavior in a novel environment.

Method

Subjects

Forty-eight children aged 20 to 30 months (median age, 24 months) were recruited through birth records. Approximately 60% of those who were

contacted participated. All were from intact homes in which the mother was the primary caretaker of the child. All children were from white middle-class homes, and only one child had attended formal day care.

Setting

The playroom floor (4.2 x 2.8 m) was divided by masking tape into 24 equal 70-cm squares. Three toys (a telephone, xylophone, and musical push-toy) were permanently affixed to the floor. A table and chair were placed near the door but did not obstruct the exit. On the table were remote controls to a tone generator and a tape recorder. Behind a one-way mirror was space for an additional observer.

Procedure

All mothers posed before a light-tan screen in a room brightly illuminated by flourescent lighting. Each wore a standard red-plaid smock to exclude the possibility of identification through distinctive clothing. A Polaroid SX-70 camera, mounted on a tripod 90 cm from the mother, photographed her full face and upper torso. In half of the pictures, the image was sharply focused. The remaining images were deliberately blurred by setting the focal point at 31 cm and attaching a Polaroid #121 close-up lens to the lens of the camera. According to pilot research, the resulting color photograph was barely recognizable to either adults or children as a person and was unidentifiable as the child's mother. All pictures were immediately encased in acetate to protect them.

Each child was accompanied into the playroom by a female escort who demonstrated the three toys. She then handed the child either a clear

or a blurred photograph of the mother and labeled it according to one of three randomly assigned conditions. It was either correctly identified ("a picture of your mother"), mislabeled ("a picture of Mrs. Jane Smith"), or it received no verbal label. The six groups, differing in terms of the clarity and labeling of the one photograph given to them, were each comprised of four boys and four girls.

The mother, who had remained at the threshold of the playroom, then said, "Goodbye, I'll be back soon. You play with the toys." As the mother left, the escort sat down in the chair and checked that the door had been left open (Adams + Passman, in press; Rinkoff + Corter, 1980). Timing of the session and recording of the behaviors began at the completion of the mother's parting sentences. Children were observed for five minutes or until they left the playroom.

Dependent Variables

Pursuit of the mother was defined in terms of the time elapsing until the child crossed the threshold of the playroom to follow her. Children who remained in the room for the entire five minutes received the maximum score of 300 seconds (Adams + Passman, in press; Halonen + Passman, 1978). To index exploration, the number of squares that the child entered was recorded on a map that depicted the grids on the floor (Passman + Erck, 1978). The durations of playing with the toys, gazing at the photograph, and holding it were timed. All instances of spontaneous verbal labeling of the photographs by the children were also tallied. Pursuit of the mother and all photograph-directed behaviors were scored by the escort using a tone generator which enabled her to record behavior without looking away from the child.

Data from a randomly selected 20% of the children were recorded by additional hidden observers to compute interobserver reliability. The lesser total frequency or duration noted for each subject was divided by the greater observation to produce a mean proportion of agreement for each measure. Mean interobserver agreement was .89 (range, .68 - 1.00) for pursuit of the mother, .95 (range, .67 - 1.00) for exploration, .90 (range, .50 - 1.00) for play duration, .95 (range, .50 - 1.00) for photograph gazing, and .83 (range, .13 - 1.00) for photograph holding.

Results

The six measures were evaluated by a 2 (Picture clarity) x 3 (Label) multivariate analysis of variance (MANOVA).[1] A significant multivariate effect attributable to picture clarity was found, $F(6,37) = 2.61$, $p < .025$, but labeling was not a statistically reliable factor. The influence of picture clarity on each dependent variable is presented in Table 1.

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Insert Table 1 about here

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Subsequent univariate analyses revealed that a clear photograph of the mother led to significantly more holding, $F(1,42) = 8.67$, $p < .005$, gazing, $F(1,42) = 5.46$, $p < .025$, and spontaneous labeling, $F(1,42) = 7.10$, $p < .025$ than did a blurred one. Although not reaching individual univariate significance, a similar pattern was found for the remaining measures (Table 1). Children with a clear picture tended to remain in the room longer, move about more, and play longer than children presented with an unrecognizable photograph.

By the second half of the 5-minute session, a considerable proportion of the children (58.3%) had left the playroom. Nevertheless, pursuit, exploration, and play of those children who remained there were affected by the clarity of the photograph, but not by the label attached to it. Of the 24 children given a clear picture, 13 remained in the playroom for longer than half the session, whereas only 7 of the 24 children with a blurred photograph did so, $\chi^2(1) = 3.08$, $p < .05$. With regard to locomotor activity, 8 of the clear-picture children explored during the second half of the session compared to only 3 with the blurred picture, $\chi^2(1) = 1.89$, $p < .10$. Likewise, an overlapping 8 children with clear photographs played with toys during the second half of the session relative to 3 children with blurred pictures, $\chi^2(1) = 1.89$, $p < .10$.

Regardless of the label provided by the escort, none of the 24 children given blurred photos spontaneously labeled them during the session; however, 12 of the 24 children with a clear picture spontaneously called it "Mommy" (or a clear variation, such as "Mama" or "Mom"). As an additional corroboration of the children's interpretation of the pictures, each was questioned directly as to the identity of the image once the session was completed. Nineteen of the children with a clear-mother photograph correctly labeled it and discriminated it from a picture of an unknown woman (a mother of a child previously tested), whereas only 3 with a blurred-mother photograph did so, $\chi^2(1) = 21.48$, $p < .005$.

Discussion

Like films, videotapes, and vocal recordings for older children (Adams + Passman, 1979; Passman + Erck, 1978), a clear photograph of the

mother was found to affect the behaviors of two-year olds separated from her. The children not only held, looked at, and spontaneously identified the picture more than did children given an unrecognizable image, but they also played, explored, and remained in the room longer. These results suggest that adjustment during necessary separations (e.g., day care, hospitalization, etc.) may be enhanced by providing young children with easily portable photographs of their mother.

When children are being prepared for their mother's departure, even subtle differences in what is said to them can strongly affect their subsequent adjustment (Adams + Passman, in press; Weinraub + Lewis, 1977). However, attaching verbal labels to the photographs presented to them exerted no effects either on separation behaviors or on photograph-directed responses. Apparently, naming the blurred picture "Mother" did not enhance its value, nor did mislabeling a clear image of her detract from its meaningfulness. Post-experimental questioning revealed that the simple attempts at altering the children's beliefs about the stimuli were largely unsuccessful. The children seemed to impose their own interpretations on the picture based on its visual features, regardless of the externally proposed designations. This notion is consistent with Passman and Erck's (1978) observation that the four-year olds who mistook the film of a stranger as their own mother had done so spontaneously, despite the fact that the stranger film had been appropriately labeled for them. Both studies suggest that young children often base their perceptions solely on the visual stimuli before them and may be relatively uninfluenced by external verbal cueing. Nevertheless, in contrast to the older children

who sometimes spontaneously perceived their mothers when the stimuli were ambiguous (Passman + Erck, 1978), none of the two-year olds in the present study did. At this young age, when symbolic representations are incipient (Brooks-Gunn + Lewis, 1979; Lewis + Brooks, 1978), it appears that the visual stimulus must be relatively clear and unambiguous to become identified as the mother.

Studies of attachment objects (e.g., blankets, pacifiers) have shown them to be effective only among children who had previously acquired attachments to them (e.g., Halonen + Passman, 1978; Passman + Weisberg, 1975). However, the photograph was a relatively novel stimulus which had probably not been associated with direct conditioning as a secondary reinforcer or discriminative stimulus. Tactile (Schaffer + Emerson, 1964), auditory (Adams + Passman, 1979), or symbolically influencing perceptual characteristics of the mother were also unnecessary for facilitating adaptive responding. The functional significance of the photograph was thus most likely derived from its perceived visual similarity to the mother (i.e., through stimulus generalization) (Passman + Erck, 1978).

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Photograph

13

Footnote

MANOVA was employed because the dependent variables were not independent of one another (Finn & Mattsson, 1978). For the purposes of entering data into multivariate and univariate analyses, a normalizing logarithmic transformation of the timed variables (latency to leave and play duration) was employed, since the means and standard deviations of these scores tended to be proportional (Kirk, 1968; Snedecor & Cochran, 1967).

Table 1

Means and Standard Deviations of Six Measures

as a Function of Picture Clarity

Dependent Variable	Clear Photograph		Blurred Photograph	
	M	SD	M	SD
Holding (sec)	25.75	51.31	3.96	11.05
Gazing (sec)	8.54	12.94	1.50	5.50
Spontaneous labeling	.88	1.51	0.00	0.00
Pursuit of the mother	150.30	127.81	98.75	96.48
Cells entered	13.71	13.96	8.75	11.28
Play duration	85.08	98.12	47.00	77.02